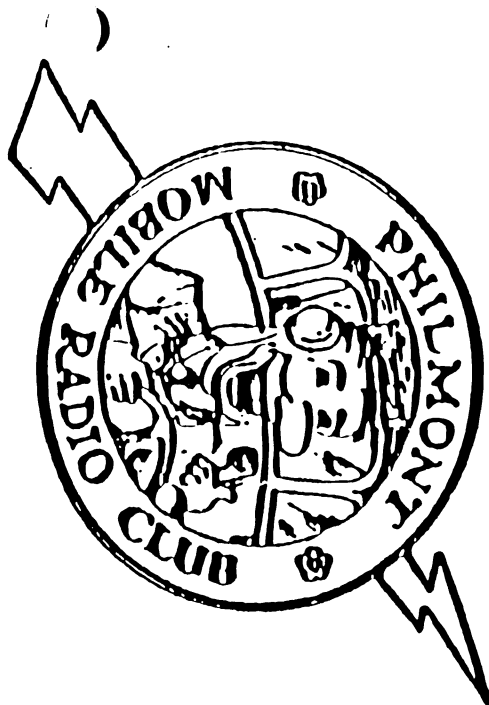


FIRST CLASS MAIL

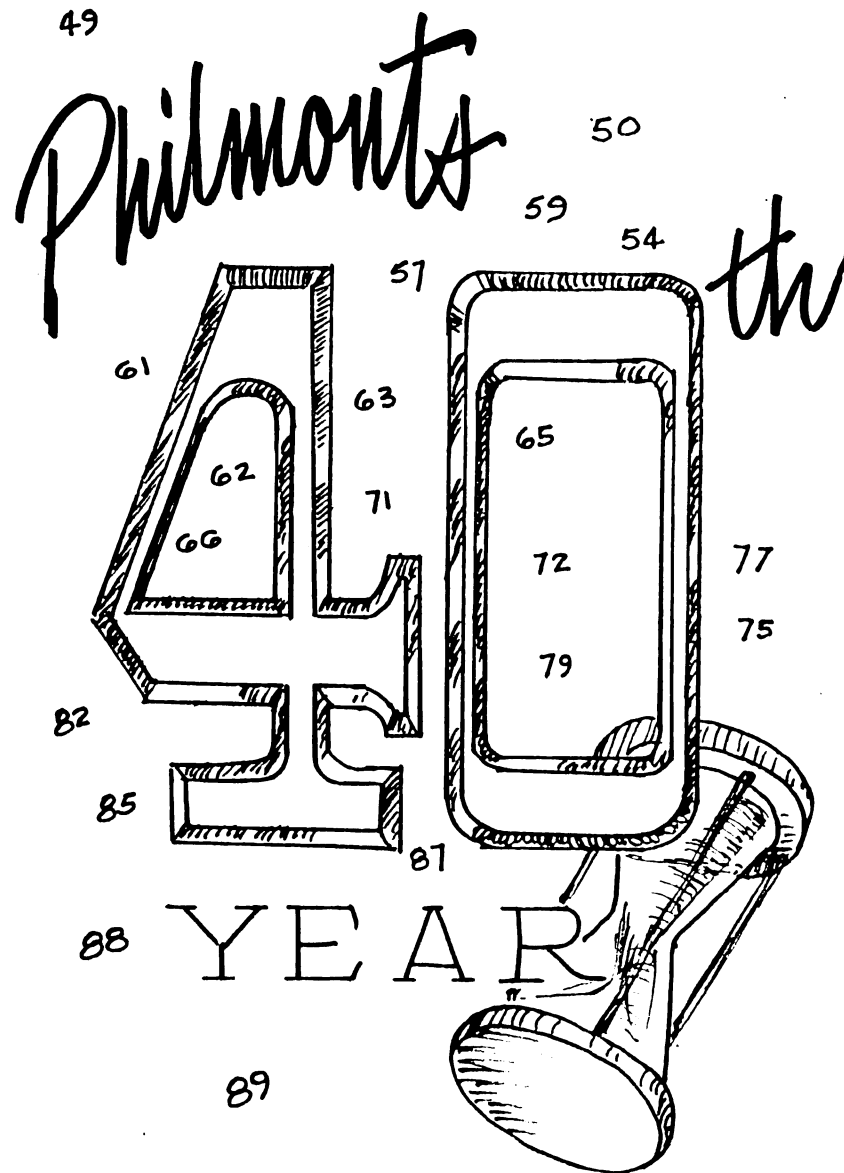


the blurb
A Philmont Mobile Radio
Club Publication
125 Keeley Avenue
New Britain, PA 18901

PHILMONT MOBILE RADIO CLUB
W3RQZ • W3TKQ • W3QV

BLURB
January 1988

PHILMONT MOBILE RADIO CLUB
SPECIAL SERVICE CLUB



is published monthly by and for the members of The PHIL-MONT MOBILE RADIO CLUB, INC. whose purpose is to promote Amateur Radio in general, and Mobile Radio in particular. Copying and quoting is permitted with a credit line. We gladly exchange publications with other amateur radio clubs; requests should be sent to the Editor. BLURB subscriptions are available to non-members for \$6.50 addressed to the Treasurer. The club meets at 8 PM on the first non-holiday Monday of every month at The Franklin Institute, 21st Street and the Benjamin Franklin Parkway, Philadelphia. Use the rear entrance. ALL VISITORS ARE WELCOME!

Amateur Radio License Examinations - Every meeting night at 6:30 PM.

CLUB INFORMATION

- 24 Hour Information Number at W3TKQ -

(215) 448-1139

Mailing Address: P.O. Box 88, Abington, PA 19001

STATIONS

W3QV - 147.03 Mhz. Repeater - 8200 Ridge Avenue, Philadelphia, PA - Trustee W388B

W3RQZ - 1176 Old York Road, Abington, PA - Trustee W3VVS

W3TKQ - The Franklin Institute, Philadelphia, PA - Trustee W3PWG

W3TKQ Operators: W3AAL, Fred; N3ABS, John; K3TEF, Frank; KA3PJC, Jack; W3PWG, Rollie

OFFICERS

PRESIDENT: W3UY, Larry Clifford, 615 Apache Lane, Norristown, PA 19401

VICE PRESIDENT: W3AUN, Mark Ackerman, 821 Moredon Road, Meadowbrook, PA 19046

SECRETARY: N2RM, Rob Moore, 9U Rose Rita Terrace, Hammonton, NJ 08037

TREASURER: KB3IV, Ed Masarsky, 15 Poe Avenue, Wyncote, PA 19095

DIRECTORS

W388B (90); KB3JW (89); K3KUD (89); W3LKI (90); ????? (A); ????? (A); ????? (A)

COMMITTEES

Archives: W3IIN	MO-COM 5: N3DHI	Social Events:
Awards:	Net Control: W3CMM	Special Events:
BLURB: W3PST	Program: W3CMM	Sunshine:
Directory: W3KQJ	Publicity: N3EAY	VE Program: KM3N
DX: W3AUN	Refreshments: N3EAY	W3TKQ: W3PWG
Membership: W3IIN	Repeater & Tech: W388B	Welcome: W3VVS

BLURB STAFF

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Assistant Editors: W3IIM & W3KQJ

Typist: W3IIN

DEADLINE: To be assured of publication in the current month, all copy MUST be in the hands of the Editor at the Board of Directors' Meeting.

PHIL-MONT's Net Schedule

SUNDAY	TUESDAY
09:30 147.030 MHz FM	20:00 147.030 MHz FM
10:00 28.400 MHz SSB	Personalized CW
10:20 3.993 MHz SSB	Practice Net

ASK NOT WHAT PHIL-MONT CAN DO FOR YOU.....

How many times have YOU served Phil-Mont as an officer?

----- 10 -----
W3QQH/W388B

----- 8 -----
KB3IV

----- 7 -----
K3SPS

----- 6 -----
W3GOW/W1FHP

----- 5 -----
W3DSG
W3VVS
W3CMM

----- 4 -----
K3UWO
W3IIN
W3KCG
W3NIP/W2HSA

----- 3 -----
K3GNJ
W3AMH
W3CDY
W3GQD
W3OWK/K2LK
W3SAI
W3SRU

W3EQV/W2FUM

W3EXY

W3IM

W3IRS

W3KN

W3OEC/W3UQ

W3PHD

W3QZO

W3UY

W3YHV

W3ARD

W3LGY/KC2HX

W3KQJ

----- 1 -----

K3CEE

K3DJE

K3GBA

K3JHK

N3AVE

N3DHI

W3AAG

W3AJO

W3BIP

W3CNO

W3DHJ

W3GIF

W3IIM

W3IVD

W3SAI

W3KHR

W3LKI

----- 2 -----

AK2I

K3HIE

K3HIJ

K3KNH

K3LYR

K3NYL

KA3BET

N2RM

N3EAY

W2FUM

W3ADV

W3AWG

W3MHR/W3KN

W3QOI

W3PXY

W3RCE

W3UVL/K2SXU

W3VCE

W3WNC

W3WPD

W3WXC

W3YJM

W3AUN

W3KLR

W3KOH

PEGGY BALCH

Our sympathies to Jon Balch, W3KG, formally W3AES, on the death of his wife Peggy, at a family Christmas party December 23, 1988. She died of a sudden heart attack.

Old time members of Phil-Mont will recall Jon for his considerable girth and his trade mark of coax, including connectors, for a belt.

Peg and Jon have two children of their own and Peg had a third child from a former marriage to Jack Mahoney, W3DJW. Jon has recently been heard on '03' on route to work in the Morgantown area.

Sam's OTHER CORNER.

COMING SOON.. MAYBE!

AFTER 20 YEARS RESEARCH..

THE REAL 'FACTS' OF THE

PHILADELPHIA EXPERIMENT

YOU JUDGE YOURSELF... TRUE OR NOT!

PHIL-MONT COMMITTEES

ARCHIVE:	Maintain and improve the club's archives of membership, submitted photographs, video tapes, and press clippings of club oriented functions.
AWARDS:	Select deserving club members for our annual awards.
BLURB:	Organize member submitted articles; technical, editorial, or other, and provide general help required to get the Blurb out each month. Subcommittee: BLURB folding.
DIRECTORY:	Collate and publish a yearly membership directory.
DX:	Track DX and report findings to membership
MEMBERSHIP:	Encourage new member applications, and maintain membership records.
MO-COM 5:	Maintain and improve our MOBILE COMMUNICATIONS van.
NET CONTROL:	Coordinate our various nets, and assist with Net Control functions as necessary.
PROGRAM:	Obtain program speakers, material and ideas for our monthly meeting programs.
PUBLICITY:	Publicize our club and our club's activities to both the Ham and the General communities.
REFRESHMENTS:	Obtain the goodies for our monthly meetings.
REPEATER & TECHNICAL	Maintain and improve our club's repeaters, and consult on other technical problems within the club and its equipment.
SOCIAL EVENTS:	Plan and organize social events for the club.
SUNSHINE:	Maintain contact with unwell club members.
SPECIAL EVENTS:	Plan, organize, and coordinate special service events.
VE PROGRAM:	Administer the Novice through Extra Class license exams according to the V-E guidelines.
W3TKQ:	Maintain, improve, and operate the club station W3TKQ.
WELCOME:	Meet and greet members and visitors at the monthly meetings.

The PREZ SEZ W3UY

Happy New Year -- the 40th year of Phil-Mont. This club has come a long way since its founding when our mobile antennae were 8 feet in length. Now they are measured in inches. I hope that the members' interest in, and support of, the club will prove to be the reciprocal of our experience in antenna length. In other words, let's again get interested in our club and support it. One person alone can not make it a success. It takes all members to make the club go. How well we all know that many hands makes the job light.

As a starting point, let's resume to again check into the Sunday nets. Several ears ago, those of us who had call signs toward the end of the alphabet, were receiving check in numbers in the forties and fifties on the

two meter net. Now we regularly get check in numbers in the twenties. Where has a third to one half of the club gone?

If you find the Sunday nets boring, speak up. How would you want the nets improved? An expression of your ideas will help. While the idea you might suggest may not be fully implemented in and of itself, it may well be the foundation from which better nets will evolve. But, if your ideas are not expressed but remain in your mind's vault, your help is denied to the club. Is this fair? Does it give you any more right to criticize if you do not agree?

Speak up, fellow members. Let's keep Phil-Mont the premier Amateur radio club in the Delaware Valley -- no -- rather make it the leader in the Second and Third Call Sign areas just for starters.

Sam's CORNER

IT SEEMS HAL, W3AA HAS INVITED CHAZ- ZPP AND AL GNM, TO FLORIDA, HOWEVER, THEY CAN'T MAKE IT. Hmm,, WONDER IF THAT IS WHY THEY WERE INVITED?

MINUTES
DIRECTORS MEETING
NOVEMBER 1988

The November mid-month meeting was held on 11/16/88, and again another mid-month at the home of N3EAY. In attendance were N3EAY, but of course- it's at his house - N2RM, why doesn't anyone in New Jersey ever have mid-month, W3AA, K3GBA, WB3CMM, W3IIM, N3DHI, W3BBB, W3UY, W3VVS, W3RM, and Ruthanne.

(Awards)
W3BBB said he has received 10 nominations for Philmonter of the year.

On another subject, Jim reported that W3YLT would like the Van at 5:30 am for the Thanksgiving day Parade. The van and 3 operators are to be needed. That brought the comment as to whether anyone, let alone W3YLT, would be ready at that hour of the morning.

Jim also said that the Institute will buy coax to replace the coax that had been cut during construction work at the Franklin Institute. K3GNM will look at the Drake RTTY equipment from W3TKQ to see if it can be repaired at a reasonable cost.

(MOCOM)

Rick, N3DHI said that on November 23rd through 28th that the Van will be moved for the cleaning of leaves underneath the spot upon which it normally resides. He said Ray Gillespie, KB3JW has been removed as an operator of the Van.

Rick made a motion that four pair of headphones (Radio Shack) be purchased for the Van - to keep out noise, etc. After lengthy discussion, WB3CMM said he will check out prices from his "sources".

Rick said Montgomery and Bucks Counties were sent a letter regarding operators of the Van as well as a call down list. The list includes the responsibilities of Phil-Mont as well as a list of frequencies that can be operated. This was done in response to a query from Bucks County.

It is the responsibility of RACES to provide permanent operating personnel for the Van.

(Budget Committee)

W3BBB presented a copy of the November 14, 1988 Budget Committee Report. He made a motion for the approval of the Budget presented therein which WB3CMM seconded and the board unanimously subsequently approved.

W3IIM brought up as a point of discussion that Phil-Mont should have an interest bearing account. N3EAY will investigate.

N3DHI brought up for discussion the need for a generator for the Van - a continuing saga. He needs a 3 to 3.5 kw two man portable, and brought it up as the "Project for the Year". W3RM said the club could use his when he gets it. Does that then make the "Project of the Year" to get W3RM to "get it"?

(Old New Business)

W3IIM asked for net info to which WB3CMM quickly agreed to provide. It was also decided that the swap net should be taken off for the time being.

The meeting was adjourned at 9:45pm and Ruthannes refreshments were enjoyed by all.

Respectfully Submitted,

Robert R. Moore, N2RM, Secretary

PHIL-MONT MOBILE RADIO CLUB
OFFICERS

YEAR	PRESIDENT	VICE PRESIDENT	SECRETARY	TREASURER
1949	W3PHD	-	W3KCG	W3KCG
1950	W3PHD	W3AAG	W3KCG	W3KCG
1951	W3IW	W3VVS	W3QQH/W3BBB	W3QQH/W3BBB
1952	W3QQH/W3BBB	W3IM	W3NIP/W2HSA	W3QOI
1953	W3NIP/W2HSA	W3IM	W3QQH/W3BBB	W3DSG
1954	W3VVS	W3IRS	W3QQH/W3BBB	W3DSG
1955	W3NIP/W2HSA	W3CNO	W3QQH/W3BBB	W3DSG
1956	W3QZO	W3SAI	W3QQH/W3BBB	W3DSG
1957	W3UVL/K2SXU	W3DHJ	W3SAI	W3DSG
1958	W3YJM	W3PYX	W3SAI	W3OEC/W3UQ
1959	W3AWH	W3VVS	W3IVD	W3OEC/W3UQ
1960	W3WNC	W3CDY	W3GOW/W1FHP	W3VCE
1961	W3NIP/W2HSA	W3CDY	W3EQV/W2FOW	W3GOW/W1FHP
1962	W3CDY	W3GOW/W1FHP	K3GNJ	K3DJE
1963	W3GOW/W1FHP	K3GNJ	K3HIJ	W3KHR
1964	K3GNJ	W3EQV/W2FOW	W3WPD	W3MHR/W3KN
1965	K3HIJ	W3YHV	K3CEE	W3GOW/W1FHP
1966	W3ADV	W3QZO	K3UWO	W3GOW/W1FHP
1967	W3YHV	W3OWK/K2LK	K3UWO	WA2RDC
1968	W3KN	W3OWK/K2LK	K3JHK	K3NYL
1969	K3UWO	W3VVS	K3SPS	K3NYL
1970	W3WXC	W3VVS	W3AJO	K3KNH
1971	W2FOW	W3ADV	WA2RDC	W3QQH/W3BBB
1972	W3OWK/K2LK	K3HIE	K3LYR	W3QQH/W3BBB
1973	W3QQH/W3BBB	K3LYR	K3UWO	W3KN
1974	W3EXY	W3GIF	K3HIE	K3SPS
1975	W3EXY	K3KNH	W2FOW	K3SPS
1976	W3AWH	W3BIP	WA3KL R	K3SPS
1977	W3AWH	WB2LGY/KC2HX	W3AWG	K3SPS
1978	WB2LGY/KC2HX	WB3CMM	W3GQD	K3SPS
1979	W3AWG	W3RCE	W3IRS	K3SPS
1980	WB3CMM	W3GQD	K3GBA	AK2I
1981	AK2I	W3SRU	N3AVE	W3UY
1982	W3SRU	W3GQD	WB3KOJ	K83IV
1983	K83IV	WB3CMM	WB3KOJ	W3IIN
1984	K83IV	W3IIM	WB3KOH	W3IIN
1985	W3SRU	N3DHI	W3IIN	K83IV
1986	KA3BET	W3LKI	W3IIN	K83IV
1987	KA3BET	WB3CMM	N3EAY	K83IV
1988	N3EAY	WB3CMM	N2RM	K83IV
1989	W3UY	WA3AUN	N2RM	K83IV

WATCH US!
KC3LM*

The ARRL's videotape "The New World of Amateur Radio" will be broadcast on channel 12 on Saturday, January 7, at 4 PM.

The station logs telephone calls, so please 'phone (215-351-1200) near the date to thank them for airing this Amateur Radio

feature - clubs might consider sending a "thank you" note on club stationery.

Please publicize the broadcast on your nets and in your personal contacts. A letter to the chairperson of your local high school's science department would also be a good idea.

* Kay Craigie, ARRL Section Mgr.

was an acute shortage of quartz crystals and demand was very great.

America had control over the best natural sources of quartz and after the war it was found that the Germans were well along with research on how to grow crystals artificially. The US scientists continued research and were successful in the manufacture of synthetic crystals. They became the preferred product.

Culturing of synthetic crystals requires feed stocks of natural quartz crystal and today most of that comes from domestic sources. The natural quartz feed stock is loaded into the bottom half of an autoclave. In the top half, hundreds of thin quartz seed plates are hung in a cluster, something like a chandelier. An alkaline solution is pumped in and the autoclave is sealed. The temperature in the bottom half is raised to 750 degrees F. The quartz dissolves and its elements, bonded to those of the solution, rise to the cooler seeds, and grow in accordance with the preordained lattice. After thirty to forty-five days, the autoclave is opened to reveal a rack full of glistening bricks of quartz crystals. The bricks then go to be made into tens of thousands of wafers.

Probably one of the most common uses for quartz wafers is clocks and watches and other time-keeping circuits. A standard watch crystal oscillates at 32,768 cycles per second, these oscillations are divided in half fifteen times by step down circuits to produce exactly one oscillation per second. Machines, computers, automotive control circuits, as well as radio and television all depend upon these little wafers of quartz.

Many new uses are just over the horizon, such as devices to translate the unique vibrations of your own voice into control circuits, etc.. As you can see, these little bits of crystal, that we seem to take for granted,

are pretty well entrenched in our daily lives. I find them to be a very interesting subject.

If the reader would like to learn a great deal more about quartz crystals, there is a fine article in the Smithsonian Magazine, November 1988 issue, from which I took much of the preceding article.

WHO WAS THAT MASKED MAN?

Several weeks before Christmas, Joann Smith, N3FTC (KA3AMO's bride-to-be), found herself in Roxborough with no idea of how to get to her office in Bryn Mawr. 888 got Steve out of bed to help, but somewhere along the way he lost her in the bowels of Gladwynne. For those of you uninitiated in the twists and turns of Gladwynne, there are many areas where "you can't get there from here". Now this area of the woods is not far from Penn Valley, home of the famous Dollar Sign George, W3DSG. Sure enuf, up pops the devil himself and Ernie had Joann stop and park until he could find her - and then led her to the office, safe and sound.

A very simple story perhaps, but Ernie took the time to help when help was needed. Many of us do not see eye to eye with Ernie many times, but he has not forgotten that Ham Radio, and Phil-Mont in particular, are famous for being ready "Every Single Minute". Thanks Ernie.

W3888

(215) 448-1139

Net Control operators:
Announce this number on each net!

MINUTES GENERAL MEETING DECEMBER 1988

N3EAY called the meeting to order at 8pm on December 5, 1988 at the Franklin Institute.

(Membership)

W3IIN gave out a membership certificate to Brad Swanson.

(W3TKQ)

Rollie reported that the station is working ok and the HAL unit is being used to copy MARS, etc. on RTTY.

(Technical Report)

Jim, W3BBB said the repeater was working fine. He also said the Van worked fine in the Thanksgiving day parade.

(DX)

Mark, WA3AUN, said DX has been "Great" "Spectacular". 10 Meters has been opening up at sunrise towards Europe and in early evening hours is open towards Japan. He said you should get on 10 meters if you haven't done so in a while.

(Volunteer Examinations)

Ramona, KM3N, said 7 people took 12 elements and 72% were passed. She said during the year 184 elements were given and 107 people attended the testing session. She also reported that because of her work schedule she would have to give up her leadership of the testing program. Any Volunteers?

KB3IV reported on the Treasury and the significant income at the end of the year. He made that part of his platform upon which he was running for Treasurer again in 1988. The other being that this year He would get it right..

As luck would have it, W3BBB won the 50-50. It was not immediately determined whether such winnings would go towards Phil-Monts auto patch.

N3EAY started to compile a list of commitments for mid-month meetings for 1989.

Jack, W3IIM read a letter from the Eastern Pennsylvania SCM. It said that in the near future Ham License Plates in Pennsylvania will have "Amateur Radio Operator" on the top. The letter also said that on January 7, 1989 at 4pm Channel 12 will have an ARRL tape on Amateur Radio. Jack commented that the program should be watched and that Hams should write/call the station and thank them for having the program.

(Visitors)

Paul, W3VVS introduced the visitors who were Virginia Macrie, KA2ZZA, Robert Houck, K2JOL, Joanne Smith, N3FTC, Stuart Tener, KA3TWH, and Bob Forrester, NS3Z.

(Elections)

As a non-candidate for office in 1989, N3EAY appointed himself Judge of Election. The Candidates present mostly gave brief speeches about their candidacy. W3AA gave a brief speech on the qualifications of W3UY since he was ill and couldn't attend the meeting. WA3AUN however was another story. He blessed the group by making his unopposed bid for Vice Presidency by opening up his guitar case and pulling out his accompaniment musicians (prerecorded cassette music and player) as well as his musical instrument - The formerly famous, and now infamous, Oscar Mayer "Weiner Whistle". He played his never before heard, and hopefully never again heard, rendition of the 1812th Overture.

Since they were unopposed, the candidates for Officers were approved by acclamation and for 1989 will be

W3UY President
WA3AUN Vice President
KB3IV Treasurer
N2RM Secretary

In a hotly contested race for Directors, W3BBB and W3LKI nudged out K3GBA.

N3EAY closed the meeting at 9:30pm but not without first W3LKI expressing his thanks for the club on the job N3EAY has done during his term as President.

Respectfully Submitted,

Robert R. Moore, N2RM, Secretary

ROBERT J. RICKER
POST OFFICE BOX 93
ZIEGLERVILLE, PENNSYLVANIA 19492

November 19, 1988

Brian Beitler, KC3QB
1109 Rhodora Ave.
Reading, PA 19605

RE: THE PHIL-MONT MOBILE RADIO CLUB'S SSC RENEWAL

Mr. Beitler:

As it is very difficult to get in touch with me, I decided to drop you this letter. It will, to the best of my understanding, answer the questions about Phil-Mont.

Addressing "New Ham Development and Training", I am proud to say that we have a very active V-E Exam Program. The exams are given every month at the Franklin Institute, and are open to all who are interested. We encourage advancement; and, if asked, I know that the majority of the members are available to help with any part of a Ham's education. This includes areas not even covered by the examinations. Phil-Mont also runs an active CW net every Tuesday night on 147.03/.63. This has provided many with the opportunity to practice, and advance in this area.

As to "Public relations", I would like to say that I do not know of many clubs that are constantly called upon to provide vital communications for community events. Our most ongoing and popular event is providing communications promoting safety and the general welfare for the Bucks County Council of Boy Scouts of America during their annual canoe race (i.e. Paddlerama). We also publish a monthly newsletter, "The BLURB", that contains all the pertinent information about the club. This newsletter is distributed beyond the membership of the club, to other clubs, etc. This is yet another way we contact the outside.

"Emergency communications" you say? Well this is one area we excel in. The Phil-Mont Mobile Radio Club has had a MOBILE COMMUNICATIONS van since 1953. We are currently on our fifth vehicle for that purpose. MO-COM is an integral part of Montgomery County RACES, with its center of operation in Abington, Pennsylvania. It is staffed by twelve operators trained in the set-up and operation of the van. It is equipped to handle any HAM band, and is ready to accept the radio gear from any emergency service in the area. This includes neighboring counties also. The emergency band equipment is readily available, but not stored within the van to maintain integrity when the van is on loan to others for their HAMFESTS and the like.

found that giving a positive charge to one side of the quartz slab and a negative charge to the other caused it to bulge or shrink, depending on the placement of the contacts.

In an asymmetrical crystal such as quartz, pressure displaces positive and negative ions differently, electrical polarity at the surface results. Conversely, an external, alternating electrical field causes rhythmic displacement of ions. In response, the crystal quivers. This two part phenomenon subsequently came to be known as the piezoelectric effect.

Piezo (pronounced pee-ay-zoe --Ed) comes from the Greek word meaning to press or squeeze. Its first part, pressure on a crystal resulting in electrical polarity, can be seen in many cigarette lighters and pilotless gas stove igniters. A sharp blow on the crystal in them generates a charge, and hence, a spark. Piezoelectric crystals are also used in microphones to translate sound waves into electrical signals. There are even prospects for a piezoelectric power generation, in which crystals will convert vibrations or ocean waves into usable power.

Piezoelectricity, alternating electrical charges placed on a crystal causing it to vibrate, is the basis for most applications of quartz in electronics. Virtually all have to do with the control of radio waves or with keeping time. As it turns out, a crystal in an electrical circuit will, in addition to resonating at its own frequency, bring the oscillations of the circuit into exact harmony with the crystal's vibrations. The most common use of this effect is in operation on your wrist at this very moment. In a quartz watch, precise vibrations of a micro-thin quartz disk regulate the flow of electrons that move the hands or change the digits.

Despite its enormous technological potential, piezoelectricity was little more than a labora-

tory curiosity for almost three decades after the Curies discovered it. Then, during World War I, French scientists, anxious to find a way of detecting German submarines, found that quartz crystals could transduce sound waves into recognizable electrical signals, they had invented an early form of sonar.

The resonance of quartz also intrigued American radio fans after it was shown, in 1919, that crystals could control radio frequencies. These were the early days of radio when members of wireless clubs were madly wrapping coils of wire around broken baseball bats or Quaker Oats boxes, attempting to receive various signals on their sets. In attics and barns around the country, the pioneers bent intently over their jury-rigged boxes and listened excitedly to ships at sea. At just the wrong instant, the transmitter drifted off frequency, the operator's voice lost in a roar of atmospheric sound.

So reports of reliable quartz frequency control swept the country and wildly enthusiastic AMATEUR HAMs quickly began making their own crystals. However, cutting and shaping crystals for radio transmitters was pretty much a hit or miss operation until 1934, when a group of students at Dickinson College, in Carlisle, Pennsylvania, now a center of the quartz crystal industry, persuaded Grover Hunt, a college custodian, to help them. Hunt developed a lapping machine that mechanized the process of making quartz radio crystals and in a few years he was a millionaire.

Quartz crystals quickly became the standard means by which radio stations controlled their broadcast frequencies. The first was WEAF in New York City. A little piece of quartz the size of a nickel inside their transmitter kept their broadcasts on the right frequency. Generally the thinner the quartz wafer, the higher the frequency of its vibrations. During World War II there

QUARTZ CRYSTAL --- THE CONTROLLER! K3GBA

Many times in past years we used to hear HAMS say "Sorry, but I'm on a rock and can't move." Now with our modern equipment we move around to almost any frequency we desire, but, alas, we are still controlled by that "ROCK." With all the sophisticated circuitry we have today, we still depend in large measure on the quartz crystal for "rock stable" frequency control. I thought the following might be of interest to us as HAMS since the quartz crystal plays such an important part in our daily operations in the amateur bands.

Crystal vibrations...the best source of these is common quartz. Tiny wafers of quartz are at the heart of umpteen things that we use every day-- almost everybody's wrist watch, electric clocks, remote telephones, personal computers, VCRs, CB radios, your color television set, and even many washing machines. Slivers of quartz embedded in the innards of radio and TV transmitters keep the thousands of broadcast frequencies from jumbling together into a chaos of sound.

They allow hundreds of telephone conversations to travel through a single channel without mixing. Quartz crystals are also the crux of most precision time systems. They've already made possible wristwatch-size (data centers) and smart cards - credit-card-size plates with microprocessors (tiny computers) whose memories can store anything from account records to a person's medical history. Before long, we'll all have fantastic Dick Tracy-type wrist telephones. Thanks to quartz, stop watches (until recently, expensive, recondite pieces of equipment jealously guarded by timers at sports events) are common and cheap!

A good bit of modern electronics technology is precision frequency controlled, which might seem to have nothing to do with a "common rock" like quartz. But its atomic structure allows quartz to precisely regulate electrical circuits vibrating at millions of cycles a second. Fortunately, quartz is one of the most prevalent minerals on earth. It's as if Mother Nature foresaw the needs of the information age.

Quartz certainly is not rare. In fact, it is a crystalline fusion of our planet's two most common elements, oxygen, which contributes nearly half of the weight of the earth's crust, and silicon, which accounts for another quarter of it. Silicon dioxide (SiO₂) abounds. It makes up the bulk of sand on many beaches and is the raw material for most types of glass. However, the word "quartz" describes SiO₂ only in crystalline form, atoms arranged in orderly and infinitely repeated three-dimensional patterns called lattices. These occur in a wide variety of color and textures, ranging from vitreous beauties like purple amethyst and yellow citrine to translucent stones such as agate and prase, which often present splendid bands and patterns.

Quartz is harder than steel and for at least thirty thousand years humans have fashioned it into weapons, tools, and jewelry. The imperfection, the asymmetry, of the quartz crystal lattice is what makes it useful in electronics. The mineral's electrical properties were demonstrated in the late nineteenth century by European scientists.

Jacques and Pierre Curie hypothesized that subjecting crystals such as quartz to mechanical stress would generate electrical charges. In 1880 they attached electrodes to opposite sides of a slab of quartz, then placed weights on it. With increasing pressure, their electroscope registered growing polar electrical charges on the crystal's surfaces. Then a year later, they

"Technical advancement" is a vague title, but I will address it as best I can. As for the "advancement" of others, I think we pretty well addressed that under "New Ham Development and Training". As to our club station, W3TKQ in the Franklin Institute, we are constantly upgrading the station to display HAM Radio's newest areas of technology. If you ever monitored 147.03/.63, you must know that our repeater is constantly being modified and upgraded. We are currently on a project that will take approximately three years to complete.

"Operating activities"...I guess the above is not enough...O.K. Well, included to the above is a complete set of information nets across most of the bands. There's more! We have a DX committee that keeps the club's members apprised to what's "hot" on the bands. We also have a winter time net called the Snow-Bird Net that keeps our club in touch with its members that go south for the winter.

"ARRL membership recruitment" is an easy one. Every month there is a reminder in "The BLURB!", and an oral announcement made at our monthly General Meeting on The ARRL's behalf.

As is pretty obvious, I could go on and on about this club. I am pretty proud of it. We are an ongoing club. We are in the public's eye. Most of all, we are known from coast to coast. We are open to anyone, and are growing monthly. If you have anymore questions, please feel free to call me at 215-287-6806.

Oh, by the way. I have one question for you. Would you like to become a member of Phil-Mont????

Sincerely:

Robert (Bob) Ricker, N3EAY
President, THE PHIL-MONT MOBILE RADIO CLUB

BANQUET UPDATE

Betsy, N3EBE, has made a tentative offer to chair the Banquet Committee. But before we get too far along in the planning stages, we're going to take a poll (and then your money) to see just how many will come, and how much you're willing to spend.

A telephone campaign will begin in a few weeks. All club members, and ex-members of an old-timer nature, will be contacted to get their commitment. You can save someone the cost of a

phone call if you jot a note to Betsy right now! Send it to her in care of The Banquet Committee, at the club address shown on page two of this issue.

Five years ago, the Banquet was held at Bentley's in North Wales. 83 people attended, and enjoyed dancing to the music of a four piece band. The price was \$25 per person, and Hal and Marian (W3AA & WA3YJR) won the mystery prize - two tickets to the 40th Banquet!

Plan now to attend our 40th, sometime in early November, 1989!

CALCULATOR PIONEER DIES AT 58

WESTON, Mass.- Charles S. Krakauer, former president of Bowmar Instruments Corp. and a pioneer in the development of handheld calculators, died at the Newton-Wellesley Hospital, Newton, Mass., of lung cancer. He was 58.

At the time of his death, Mr. Krakauer was vice chairman and director of Bowmar, formerly of Action, Mass., and now of Phoenix. He had served as company president and chief operating officer and as president of Bowmar ALI Inc. subsidiary until he became ill; he was also a director of FCS Laboratories of Flemington, N.J.

A Brooklyn N.Y., native, Mr. Krakauer graduated from the Massachusetts Institute of Technology in 1956 with a degree in electrical engineering. He worked at Melpar Inc. and Rixon Inc. in Maryland, before joining Bowmar.

He was instrumental in the development and introduction of the \$249 "Bowmar Brain," the first handheld calculator, which reached market in 1971. Bowmar began turning out 100,000 units a month, but ran aground a few years later when Texas Instruments, provider of the primary chip in the Brain, decided to go into the calculator business itself and allegedly cut off Bowmar's supply of chips. The company filed for bankruptcy in 1975.

In 1979, after filing an anti-trust suit against Texas Instruments, Bowmar won a \$5 million out-of-court settlement and reestablished itself. The company's last creditor was paid off in 1983.

Mr. Krakauer said, in 1984, that his firm was still receiving old calculators for repair, but that repair charges were greater than the cost of a new calculator.

Tnx to W3VVS & Electronic News

JAMES L. BUIE TTL INVENTOR

PANORAMA CITY, Calif. - James Buie, who invented and patented transistor-to-transistor (TTL) logic in the early 1960s, died here last week at the age of 68.

Mr. Buie's invention, TTL, was to become the most widely used form of circuit logic, and was broadly licensed throughout the then emerging integrated circuit industry by TRW, for which the inventor worked.

James L. Buie was born in Hollywood, Calif., in 1920 and educated at Hollywood High School and Los Angeles City College. After World War II, where he rose to the rank of Lieutenant Commander as a naval pilot, he enrolled at the University of Southern California for a bachelor of science degree in electrical engineering.

In 1954, Mr. Buie joined the Ramo-Wooldridge Corp., a TRW predecessor company, where he was assigned to Pacific Semiconductor Co. Along with inventing TTL, Mr. Buie was involved in the development of dielectrically isolated integrated circuits, a single-chip parallel multiplier, a single-chip analog-to-digital converter and triple-diffused bi-polar devices.

Until 1977, Mr. Buie served as technical leader of TRW's Microelectronics Center, which he helped to establish. He was also instrumental in the start-up of the LSI Products division, where he worked until his retirement in 1983.

Tnx to W3VVS & Electronic News

ARNIE's LATEST

Having to replace a \$30.00 part in a \$500.00 toilet..... and company's coming for the New Year!

He's not finished yet, but we have to go to press.

T'WAS THE NIGHT BEFORE CHRISTMAS

I'twas the night before Christmas, and in the Ham shack, was the warm glow of tubes in the transmitter rack.

The log book was brought up to date with great care, in case the FCC might someday be there.

XYL and harmonics were snug in their beds, no Tennessee Indians to rattle their heads:

I plug in the mike in my new VFO, getting all set for a nice QSO; when from the relays there rose such a clatter, I yanked the Big Switch to see what was the matter.

Then up on the roof by the 2 meter beam, there came a QRM like a heterodyne scream.

On Gonset, on Babcock, on Viking, on Elmac, on Ranger, on Collins, on Heathkit, on Eimac. Bias to the grid and Volts to the plate, just watch that S-meter while we all modulate.

As I turned on the rig and reached for the dial, from the antenna tuner Santa slid with a smile. An RF choke he held tight to his teeth and cokes encircling his head like a wreath. A bundle of Ham gear he had slung on his back, what was that name on my new power pack?

He had a snub nose like an egg insulator and his cheeks glowed bright red like a hot oscillator. He spoke not a word, but went straight to his work, laying out all the gear and turned with a jerk, and laying a wave meter along side his nose he said "Please QSL" and up the feeders he rose.

He climbed up the dipole, to his team gave a whistle and away they all flew like a jet propelled missile. But, I heard his last signal from the ionosphere, 73s and 88s and a merry Christmas from WA3BXW/repeater.

Via N3DHI - courtesy of WA3BXW, Bill, and WA2KWW, Woody, and the East Link Staff.

TOAST

To the man who, with hammer in one hand a coke in the other, and a pouch full of tobacco, has managed to build America, or some parts therein. Who now replaces the steering wheel of his van with the wheel of a golf cart, and looks forward to warmer climates somewhere south of Georgia. We wish you a happy birthday, and say this Bud's for you.

By N3DHI at his father's 65th birthday party.

HAMFESTS

We'll print an ongoing schedule of Hamfests based on information received. Please help us keep our list current. If you don't see your favorite event listed here, it's because YOU didn't send it to W3IIM prior to the BLURB deadline!

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MAR 5

DOVER, PA
YORK WINTERFEST

Mid-Month Schedule for 1989

Jan 18 N3EAY & KA3RLD
Feb 15 KA3AMO & N3FTC
Mar 15 KB3IV & N3GLU
Apr ?? Dinner with Delmont
May 17 W3UY
Jun 14 W3888
Jul 12 KA38ET & N3EBE
Aug 16 W3IIM & W3IIN
Sep 13 W83CMM
Oct 18
Nov 15 W3AA & WA3YJR
Dec 13

* UPDATE *

JAN 9 General Meeting
Jan 18 Directors' meeting at
N3EAY & KA3RLD's
--- * ---
FEB 6 General Meeting
Feb 15 Directors' meeting at
KA3AMO & N3FTC's
--- * ---
MAR 6 General Meeting
Mar 15 Directors' meeting at
KB3IV & N3GLU's
--- * ---
APR 3 General Meeting
Apr ?? Dinner meeting with
DELMONT ARC

V.E. TEST LOCATIONS from EPA FEEDLINE

BRYN MAWR
Feb 18
Bob Haase, W3SA
(215) 293-1919
CENTER CITY
Jan 9, Feb 6, Mar 6
Ramona Dabagian, KM3N
(215) 448-1139
LEVITTOWN
Jan 5, Feb 9, Mar 9
Dave Heller, K3TX
(215) 736-3333
PERKASIE
Monthly, 3rd Monday
Stu Silverstein, K3UEI
(215) 584-0775
WARMINSTER
Jan 30, Mar 27, May 29
Tom Michaud, WA3TQJ
(215) 343-3494
NEWTOWN SQUARE
John Chester, W3PUP
(215) 544-3837

ATTENTION VES from EPA feedline

ARRL-accredited Volunteer Examiners, who are League members, can order an attractive tan call sign badge in the same format as the Field Organization volunteer badge. While the badges must be authorized by the Director, the Section Manager* can get you started with the application and ordering instructions.

* Kay Craigie, 215-688-5045



APPLE BYTES

JANUARY BIRTHDAYS

03-RITA GUTMAN (XYL W3FOG)
13-JONATHAN BALCH - W3KG
15-KAREN LENCZYNSKI (XYL KA3EIP)
17-LEE KOVNAT (XYL W83JUA)
18-MARION BUBECK (XYL K3GNM)
19-BABS CLAYTON - (XYL K3HIE)
19-WILLIAM T. MESCANTI - W83CMM
23-MILTON SOSS - N3AN
28-ROBERT G. SCHMILEWSKE - K3KUD
29-EDMUND R. MOORE - W2FUW
-RUTH ANNE RICKER - KA3RLD
30-VIRA JOHNSTON (XYL K3VXU)
31-JAMES P. FARIES - W3AOA
-FREDERICK W. REICHERT, Sr. - KA3BET

HELP PHIL-MONT

ARE YOU PLANNING TO JOIN ARRL OR RENEW YOUR CURRENT MEMBERSHIP? HELP PHIL-MONT BY JOINING OR RENEWING THROUGH THE CLUB...CONTACT KB3IV FOR THE DETAILS.

DIRECTORY UPDATE

WITH THE DECEMBER BLURB YOU RECEIVED YOUR 1989 DUES INVOICE AND DIRECTORY INFORMATION SHEET, PLEASE CHECK YOUR INFO AND RETURN TO KB3IV WITH YOUR DUES...YOUR EARLY REPLY WILL FACILITATE THE PUBLISHING OF THE 1989 DIRECTORY.

....DE W83KOJ

NEW MEMBER APPLICATION

NAME: Susie B. Lada
HANDLE: Susie
CALL: N3FTY
CLASS: General
ADDRESS: 917 Ayrdale Place
Phila., PA 19128
HOME PHONE: (215) 487-3017
OCCUPATION: Teacher

SILENT KEY

Louis DiBenedetto, K38JS, died November 30, 1988. He lived at N. 64th St. Phila. He is survived by several sisters, nephews and nieces.
Contributions in his memory may be made to The American Cancer Society, 1422 Chestnut St., Phila., Pa. 19102.

1989

JANUARY

1989

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 2m NCS W33CMM 10m NCS Anyone 75m NCS W3PWC	2 HAPPY NEW YEAR	3 CODE PRACTICE NET	4	5	6	7
8 2m NCS N33Y 10m NCS Anyone 75m NCS W3AOA	9 GENERAL MEETING & LICENSE EXAMS	10 CODE PRACTICE NET	11	12	13	14
15 2m NCS K33JW 10m NCS Anyone 75m NCS W3RCI	16 <i>Martin Luther King's Birthday</i>	17 CODE PRACTICE NET <i>Robert R. Lee's Birthday</i>	18 DIRECTORS' MEETING at N3EAY & KA3RLD's	19	20	21
22 2m NCS NEEDED 10m NCS Anyone 75m NCS AK2I	23	24 CODE PRACTICE NET	25	26	27	28
29 2m NCS KA3BET 10m NCS Anyone 75m NCS W3HFY	30 <i>Franklin D. Roosevelt's Birthday</i>	31 CODE PRACTICE NET				